



RESEARCH, DEVELOPMENT and TECHNOLOGY TRANSFER QUARTERLY PROGRESS REPORT (QPR)

Wisconsin Department of Transportation (WisDOT)
DT1241 5/2014

INSTRUCTIONS:

Research principal investigators and/or project managers should complete a quarterly progress report (QPR) for each calendar quarter during which the projects are active.

WisDOT Research Program Category <input type="checkbox"/> Policy Research <input checked="" type="checkbox"/> Wisconsin Highway Research Program <input type="checkbox"/> Other: _____		Report Period (enter year and check which quarter) Year: <u>2014</u> <input type="checkbox"/> Quarter 1 (Jan 1 – Mar 31) <input type="checkbox"/> Quarter 3 (Jul 1 – Sep 30) <input checked="" type="checkbox"/> Quarter 2 (Apr 1 – Jun 30) <input type="checkbox"/> Quarter 4 (Oct 1 – Dec 31)	
Project Title Performance and Design of Bridge Approach Panels in Wisconsin		WisDOT Project ID 0092-14-04	
Principal Investigator Name Brent Phares	Project Oversight Committee Chair Name Barry Paye	Project Start Date (m/d/yyyy) 8/13/2013	
(Area Code) Telephone Number 515-294-5879	(Area Code) Telephone Number 608-246-7945	Original End Date (m/d/yyyy) 2/12/2015	
Email Address bphares@iastate.edu	Email Address Barry.Paye@dot.wi.gov	Current End Date (m/d/yyyy)	

Project Schedule Status (check one)

☒ On Schedule ☐ On Revised Schedule ☐ Ahead of Schedule ☐ Behind Schedule

Project Budget Status

Total Project Budget	Expenditures Current Quarter	Total Expenditures	% Funds Expended	% Work Completed
\$79,974.00	\$990.20	\$2,731.28	3%	4%

Project Description

It is widely recognized that approach slabs/panels play a critical role in the highway system. These panels must provide a smooth transition from mainline pavements to bridges. Beyond being responsible for the majority of roughness typically associated with bridges, these panels must be able to effectively accommodate thermal expansion and contraction of both the bridge and the mainline pavement. Improperly designed/constructed approach panels tend to lead to the formation of a bump at the end of the bridge. The bump is not generally a significant safety problem; rather it can be an expensive maintenance issue. It is very common to attach the approach slab to the bridge via a reinforcing bar extending from the paving notch. By attaching the approach slab to the bridge, one is able to move an expansion joint away from the critical area at the abutment; this promotes drainage of roadway water away from the bridge area. However, one detail that is critical to the long-term, effective performance of approach slabs is that they must allow for free and full expansion and contraction of the surrounding elements. In general, this is accomplished by detailing one or more expansion joints.

The objectives of this work are:

- Review and analyze current approach slab performance
- Review and analyze the national state of the practice with respect to approach slabs
- Determine what other currently adopted approach slab designs may be applicable to Wisconsin
- Determine if there is a problem with current approach slab performance and, if so, will new designs will improve performance
- Determine if three expansion joints are need to provide thermal expansion/contraction relief or if one joint will be sufficient
- Improve the constructability and performance of approach slabs

Progress This Quarter (includes meetings, work plan status, contract status, significant progress, etc.)

The bulk of the effort expended this quarter has been in two primary areas. First, we have nearly completed collecting literature on the state-of-the-practice with regard to approach panel design, behavior, and performance. Second, we have spent considerable time coordinating with WiscDOT on the field examination portion of the study (which will be the focus of next quarter).

Anticipated Work Next Quarter

The primary effort in the next quarter (and principally in the month of August) will be the completion of the field performance review. The work to-date has been leading to this important step in the project. The data and information collected during this field review will form the basis for making any and all recommendations.

Circumstances Affecting Project or Budget

None

Attach / Insert Gantt Chart and Other Project Documentation

	Month																	
	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15
Task 1.1																		
Task 1.2																		
Task 1.3																		
Task 2																		
TOC Review, revision, and final submission																		

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(*enter text)

For WisDOT Use Only	
Staff Receiving QPR J. Walejko	Date Received (m/d/yyyy) 7/10/2014
Staff Approving QPR	Date Approved (m/d/yyyy)